TEXT SEARCHABLE DOCUMENT - 2009

Data Evaluation Report on the effects of BAS 800 H metabolite M08 on aquatic vascular plants

PMRA Submission Number: 2008-0431 MRID#: 47560306

PMRA# for DER: 1682000 PMRA# for original study: 1664722

Data requirement

PMRA Data Code: 9.8.5 EPA DP Barcode: 349851 OECD Data Point: IIA 8.6

EPA Guideline: § 123-2 OPPTS Guideline: 850.4400

Test material:

BAS 800 H metabolite M08

Purity: 97.2%

Common name:

M800H08

IUPAC:

N-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-

1(2H)-pyrimidynal)benzoyl]-N-isopropyl-N-methylsulfamide

CAS name:

n/a

CAS No.: Synonyms:

Reg.No. 4773881

Structural formula:

Primary Reviewer:

Janine Glaser (1009)

Canada-HC-PMRA-EAD

Date: 2008-Dec-16

yacı

Secondary Reviewers: Anita Pease

United States-EPA-OPP-EFED-ERB4

Date: 2009-Jun-09

Aferse 6/9/09

Farzad Jahromi Australia-DEWHA-CAS

Date: 2009-Feb-2



PMRA Company Code

BAZ

PMRA Active Code

SFF

PMRA Use Site Category

13, 14

EPA PC Code

118203



MRID#: 47560306 PMRA Submission Number: 2008-0431

PMRA# for original study: 1664722 PMRA# for DER: 1682000

Porch JR, Kendall TZ, Krueger HO, Holmes C. 2008. BAS 800 H metabolite M08: A 7-CITATION:

day toxicity test with duckweed (Lemna gibba G3). 2008-Aug-28. BASF-2008/7013851;

MRID-47560306; PMRA-1664722.

EXECUTIVE SUMMARY

In a 7-day toxicity study, cultures of the duckweed Lemna gibba were exposed to M800H08 (metabolite of BAS 800 H, 97.2% purity) in a static system at nominal concentrations of 0, 3.9, 6.5, 11, 18, and 30 mg/L. Mean measured concentrations were 0, 2.0, 2.5, 5.2, 9.8, and 17 mg/L representing 51, 39, 47, 54, and 58% of nominal concentrations, respectively. Three replicates were prepared for the treatment groups, each containing four plants totaling 12 fronds. Growth rate and yield based on frond number and biomass (dry weight), and visual assessment of frond abnormalities were used to determine the endpoints. Biological endpoints are reported corresponding to the mean measured concentrations. Necrosis was extensive in the two highest test concentrations (8.5-19% at 9.8 mg/L; 23-35% at 17 mg/L), and chlorosis was also observed to a limited extent (1.1-2.8% at 9.8 mg/L; 1.7-3.7% at 17 mg/L). Root destruction was also observed at the highest dose. Significant inhibition of frond number and biomass yields and growth rates was observed at 9.8 and 17 mg/L after 7 days (NOEC 5.2 mg/L). The lowest point estimates were 7d EC50 12 mg/L and 7d EC05 2.2 mg/L, both based on biomass yield.

This study is classified as ACCEPTABLE/FULLY RELIABLE. The results are suitable for use in regulatory risk assessment.

Results Synopsis

Test item:

M800H08

Test organism:

Lemna gibba

Endpoint

biomass yield 7d EC50 (mg/l) 12 7d EC05 (mg/l) 2.2 biomass yield

frond number yield and growth rate; biomass yield and growth rate 7d LOEC (mg/l) 9.8 frond number yield and growth rate; biomass yield and growth rate 7d NOEC (mg/l) 5.2

MATERIALS AND METHODS I.

Guideline:

OECD 221 (2006), ASTM 1415-91E (1991), OPPTS 850.4400 (1996)

GLP:

yes (certified laboratory), non-GLP data were periodic analyses of well water for

potential contaminants (appendix 4, page 34) and range-finding results (Table 1, page 20)

Testing facility: Wildlife International Ltd, Easton, Maryland, USA

Dates of work: 2008-Jul-30 to 2008-Aug-28

Deviations:

The maximum recorded temperature was 27.2°C, which exceeded the range of 25±2°C.

Initial biomass was estimated using an average of three representative samples of the inoculum culture rather than a single sample. Chemical analysis of the samples was

performed using an analytical method that was not validated.

Test substance A.

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Name:

Reg.No. 4773881

Code:

M800H08

Type:

metabolite of BAS 800 H

Description:

solid L74-66

Batch No.:

97.2%

Purity: Expiry date:

2010 Feb 01

Danier and a

Dosing vehicle: 20X AAP medium

Table 1: Physical and chemical properties of test substance

Parameter	Value
Water solubility	31.71 mg/l at 25°C (estimated)
Vapour pressure	not determined
UV absorption	not determined
pK _a	not determined
log K _{ow}	-0.51±1.01 (neutral pH) -2.51±1.01 (acidic pH)
Stability under test conditions	measured concentrations declined 64-97% after 7 days; the lower the test concentration the greater the decline, loss likely attributed to adsorption to / absorption by the increasing plant biomass

B. Toxic reference

None.

C. <u>Test organism</u>

Species:

Lemna gibba

Strain:

G3

Source:

in-house culture originally obtained from USDA

Culture conditions:

two weeks in 20X AAP medium prior to test initiation

D. Culture medium

Standard freshwater 20X AAP medium as per ASTM 1415-91E using stock nutrient solutions and purified well water (Appendix 4, page 34). Adjusted to pH 7.5 and sterilized by filtration prior to use.

E. <u>Design of biological test</u>

,7-d exposure in standard 20X AAP medium. A 30 mg/l stock solution in 20X AAP medium was prepared, which was slightly cloudy with a beige tint. This also served as the highest test concentration. Remaining test solutions were clear and colourless. 6 treatment groups (nominal concentrations of 0, 3.9, 6.5, 11, 18, and 30 mg/L); 3 replicates/treatment group. Each replicate contained four plants totaling 12 fronds and 100 mL test solution in 250mL glass beaker covered with disposable Petri dishes indiscriminately positioned daily in an environmental chamber.

Nominal test concentrations were based upon a range finding toxicity test at 0, 0.49, 1.6, 5.4, 18, and 60 mg/L with 0, 27, 26, 25, 35, and 92% inhibition. At 18 mg/L, fronds were curled. At 60 mg/L, fronds were small (four dead, 12 necrotic) and colonies were broken up.

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F. Observation and measurements

On day 0, 3, 5, and 7, direct counts of frond numbers and observations of chlorosis, necrosis, breakup of colonies, death, root destruction, and any other abnormalities were performed. Biomass (dry weight) was determined at the beginning of the test from three representative samples of the inoculum culture (each sample 4 plants totaling 12 fronds), and at the end of the exposure period for each replicate.

II. RESULTS

A. Test conditions

Start pH:

7.7-7.9

End pH:

8.6-9.0 (increased over time but not more than 1.5 units)

Solution temperature:

24.0-26.6°C

Photoperiod:

continuous illumination

Light intensity:

4350-5710 lux

B. Verification of test concentrations

Test concentrations were analytically verified by HPLC using variable wavelength detection set at 220nm. The LOQ was 2.06 mg/L and the LOD was 0.0250 mg/L. After 7 days, measured concentrations from the two lowest treatment groups (3.9 and 6.5 mg/L) were less than the LOQ (2.06 mg/L), and measured concentrations in the three highest treatment groups declined to 23-34% of nominal values (Table 2).

Table 2: Measured concentrations of M08 in test samples

Nominal (mg/l)	Time (days)	Measured (mg/l)	% of nominal	Mean measured* (mg/l)	Mean % of nominal
0	0	<loq< td=""><td></td><td></td><td><u> </u></td></loq<>			<u> </u>
	7	<loq< td=""><td>_</td><td></td><td></td></loq<>	_		
3.9	0	3.80	97.3	2.0	51
	7	<loq< td=""><td></td><td>·</td><td></td></loq<>		·	
6.5	0	6.25	96.1	2.5	39
	7	<loq< td=""><td></td><td></td><td></td></loq<>			
11	0	10.6	96.4	5.2	47
	7	2.51	22.8		
18	0	17.8	98.7	9.8	54
	7	5.39	29.9		
30	0	29.6	98.5	17	58
	7	10.2	34.2		

^{*}Geometric mean. For concentrations <LOQ, a value of 1.03 (1/2 the LOQ) was used for computation

C. <u>Biological findings</u>

Necrosis was extensive in the two highest test concentrations (8.5-19% at 18 mg/L; 23-35% at 30 mg/L), and chlorosis was also observed to a limited extent (1.2-2.8% at 18 mg/L; 1.7-3.7% at 30 mg/L) (Table 3). Root destruction was also observed at the highest test concentration. Regulatory Authority refers to direct analysis of frond number and biomass as "yield" parameters. Significant inhibition of frond number and biomass yields (Table 4) and growth rates (Table 5) was observed

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at 18 and 30 mg/L after 7 days.

Table 3: Mean percentage of frond abnormalities

Mean			Day 3				Day 5	-			Day 7	
measured	N*	Dead	Chlorotic	Necrotic	N*	Dead	Chlorotic	Necrotic	N*	Dead	Chlorotic	Necrotic
(mg/L)												
0	32	0.00	1.01	0.00	81	0.00	0.00	0.40	184	0.00	0.00	0.17
2.0	34	0.00	0.00	0.93	87	0.00	0.00	0.37	205	0.00	0.19	0.30
2.5	31	0.00	0.00	0.00	77	0.00	0.00	0.85	181	0.00	0.18	0.18
5.2	30	0.00	0.00	2.19	77	0.00	0.00	0.87	168	0.00	0.19	0.60
9.8	26	0.00	0.00	18.84	61	0.00	2.81	11.17	121	0.00	1.16	8.52
17	·24	0.00	0.00	35.08	54	0.00	3.73	33.06	94	0.70	1.72	23.41

^{*} N = mean number of fronds per treatment

Table 4: Mean yield and percent inhibition after 7 days

Mean measured	Frond	number	Bio	mass
(mg/L)	Mean yield (fronds)	% Inhibition	Mean yield (fronds)	% Inhibition
0	184		23.3	
2.0	205	-11	27.7	-19
2.5	181	1.6	22.7	2.6
5.2	168	8.7	22.3	4.3
9.8	121*	34	· 14.8*	36
17	94*	49	7.1*	70

^{*}significantly different from control (Dunnett's test, p<0.05)

Table 5: Mean growth rate and percent inhibition after 7 days

Mean measured	Frond nu	mber	Biomass					
(mg/L)	Mean growth rate (fronds per day)	% Inhibition	Mean growth rate (fronds per day)	% Inhibition				
0	0.389	_	0.406					
2.0	0.404	-4.0	0.430	-5.8				
2.5	0.387	0.37	0.403	0.74				
5.2	0.377	3.1	0.401	1.3				
9.8	0.329*	15	0.346**	15				
17	0.295*	24	0.243*	40				
1 100 1 1100								

^{*}significantly different from control (Dunnett's test, p<0.05)

D. Test with toxic reference substance

None.

E. Validity criteria

The validity criterion of control frond number doubling time <2.5 days was fulfilled (1.8 days, page 15).

^{**} study authors reported significant different from control (Dunnett's test, p<0.05); however, the Regulatory Authority did not detect significant difference at this dose; nevertheless, the Regulatory Authority concludes that this inhibition observed at this dose is biologically relevant

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F. Biological endpoints derived

The EC50, LOEC, and NOEC values corresponding to mean measured concentration were determined by the study authors and verified by the Regulatory Authority. Dunnett's test was used for hypothesis testing (or Bonferroni t-test if auxillary tests indicated non-normal distribution or unequal variances) and linear interpolation was used for derivation of point estimates. The Regulatory Authority also derived EC05 values for EPA purposes if needed:

Table: Biological endpoints derived

	Fron	d number	Biomass			
Endpoint	Yield	Growth rate	Yield	Growth rate		
EC50 (mg/L)	>17	>17	12	>17		
(95% ČI)			(7.0-16)			
EC05 (mg/L)	2.4	5.2	2.2	5.5		
(95% CI)	(1.8-8.6)	(0.0-7.5)	(2.1-4.9)	(0.0-7.1)		
LOEC (mg/L)	9.8	9.8	9.8	9.8*		
NOEC (mg/L)	5.2	5.2	5.2	5.2*		

n/c not calculable

III. STUDY DEFICIENCIES

Measured concentrations of M08 fell below 80% of the measured initial concentration. Therefore, a semi-static test regime should have been employed. In circumstances where measured test concentrations are not maintained within $\pm 20\%$ throughout the test, the biological endpoints can correspond to mean measured concentrations. Therefore, the classification of the study is not affected.

The highest test concentration (initial measured 30 mg/L) was slightly cloudy with a beige tint; however, adverse effects were observed at the next highest concentration (initial measured 18 mg/L) which was clear and colourless. Therefore, adverse effects could be attributed to toxicity of dissolved test substance and the classification of the study is not affected.

V. <u>CONCLUSIONS</u>

This study is classified as **ACCEPTABLE/ FULLY RELIABLE**. The study appears to have been well conducted and reported. The results are suitable for use in regulatory risk assessment. Significant inhibition of frond number and biomass yields and growth rates was observed at 9.8 and 17 mg/L after 7 days (NOEC 5.2 mg/L). The lowest point estimates were 7d EC50 12 mg/L and 7d EC05 2.2 mg/L, both based on biomass yield.

VI. REFERENCES

Oostlander M, Killins R, Barton W, Forster G, Drew L, Sandhu R. 2008. Application for BAS 800 H applied pre-seed/ pre-emerge and to chemfallow, pre-plant to soybean, and pre-plant or pre-plant incorporated to corn-field and sweet corn. 2008-Jan-14. BASF-2008/7002707; MRID-47560306; PMRA-1546730.

^{*} Regulatory Authority was not able to verify that 9.8mg/L was statistically different from control, but concludes that the inhibition observed at this dose was biologically relevant.

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APPENDIX

7d frond number yield

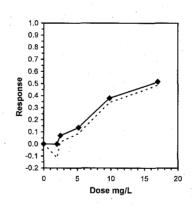
				Lemna gibba-7d from	d number Y	
Start Date:	30/07/2008		Test ID:	1664722	Sample ID:	8648-M800H08, Reg. no. 4773881
End Date:	28/08/2008 Lab ID: WI-Wildlife International		WI-Wildlife International	Sample Type:	MET-metabolite of active ingredient	
Sample Date:			Protocol:	OECD221-Lemna sp. growth	Test Species:	LG-Lemna gibba
Comments:				. •	•	*
Conc-mg/L	1	2	3			
egative control	198.00	154.00	199.00			
2	176.00	218.00	220.00			
2.5	172.00	186.00	184.00			
5.2	159.00	172.00	172.00			
9.8	128.00	132.00	102.00			
17	98.00	93.00	92.00			

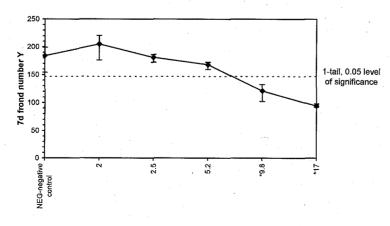
				Transform	n: Untran	sformed			1-Tailed		isot	onic
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
gative control	183.67	1.0000	183.67	154.00	199.00	13.991	- 3	-			194.17	1.0000
2	204.67	1.1143	204.67	176.00	220.00	12.140	3	-1.543	2.681	36.49	194.17	1.0000
2.5	180.67	0.9837	180.67	172.00	186.00	4.191	3	0.220	2.681	36.49	180.67	0.9305
5.2	167.67	0.9129	167.67	159.00	172.00	4.476	3	1.176	2.681	36.49	167.67	0.8635
*9.8	120.67	0.6570	120.67	102.00	132.00	13.499	3	4.629	2.681	36.49	120.67	0.6215
*17	94.33	0.5136	94.33	92.00	98.00	3.408	3	6.564	2.681	36.49	94.33	0.4858

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor	-normal dis	stribution	$(p \le 0.05)$		0.87897		0.897		-1.0292	0.28471
Bartlett's Test indicates equal var		8.11665		15.0863						
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Bonferroni t Test	5.2	9,8	7.13863		36.4873	0.19866	5333.26	277.833	2.4E-05	5, 12
Treatments vs NEG-negative con	troi									

Linear Interpolation (200 Resamples)

				_,,,,,,,,	ioui illicoi polac		
Point	mg/L	SD	95% CL	(Exp)	Skew		
IC05	2,360	0.882	1.833	8.590	1.7440		
IC10	3.729	1.240	0.789	8.764	0.5415		
IC15	5.457	1.074	0.074	. 8.556	-0.4504		
IC20	6.407	0.788	3.369	9.617	0.2790		
IC25	7.357	0.765	4.896	10.949	0.4892		
IC40	10.939	1.548	6.239	17.570	0.3526		
IC50	16.248						





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7d frond number growth rate

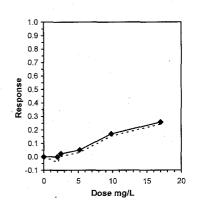
				Lemna gibba-7d fron	d number GR	
Start Date:	30/07/2008		Test ID:	1664722	Sample ID:	8648-M800H08, Reg. no. 4773881
End Date:	28/08/2008		Lab ID:	WI-Wildlife International	Sample Type:	MET-metabolite of active ingredien
Sample Date:			Protocol:	OECD221-Lemna sp. growth	Test Species:	LG-Lemna gibba
Comments:						
Conc-mg/L	1	2	3			
egative control	0.4005	0.3646	0.4012			
. 2	0.3837	0.4142	0.4155			
2.5	0.3804	0.3915	0.3900			
5.2	0.3691	0.3804	0.3804			
9.8	0.3382	0.3426	0.3057			
17	0,3000	0.2925	0.2910			

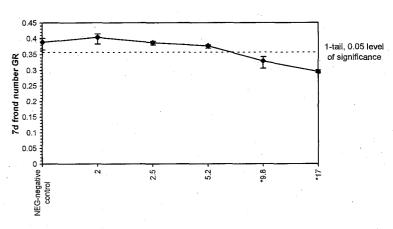
				Transform: Untransformed 1-Tailed Isot			Transform: Untrans			ansformed 1-Tailed Isotonic		1-Tailed		
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	- Critical	MSD	Mean	N-Mean		
egative control	0.3888	1.0000	0.3888	0.3646	0.4012	5.386	3				0.3966	1.0000		
2	0.4045	1.0404	0.4045	0.3837	0.4155	4.460	3	-1.323	2.681	0.0319	0.3966	1.0000		
2.5	0.3873	0.9963	0.3873	0.3804	0.3915	1.564	3	0.122	2.681	0.0319	0.3873	0.9765		
5.2	0.3766	0.9688	0.3766	0.3691	0.3804	1.721	3	1.021	2.681	0.0319	0.3766	0.9496		
*9.8	0.3288	0.8458	0.3288	0.3057	0.3426	6.118	. 3	5.045	2.681	0.0319	0.3288	0.8291		
*17	0.2945	0.7576	0.2945	0.2910	0.3000	1.639	3	7.932	2.681	0.0319	0.2945	0.7426		

Auxiliary Tests		Statistic	Critical			Skew	Kurt			
Shapiro-Wilk's Test indicates nor	0.87104				-0.9654	-0.1194				
Bartlett's Test indicates equal variances (p = 0.28)					6.31593					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MŞB	MSE	F-Prob	df
Bonferroni t Test	5.2	9.8	7.13863		0.03185	0.08194	0.00541	0.00021	5.2E-06	5, 12

Treatments vs NEG-negative control

Linear Interpolation (200 Resamples) mg/L 5.161 Point 95% CL(Exp) Skew 7.485 IC05 1.101 0.000 -0.4152 IC10 9.666 0.3150 7.093 0.680 4.401 13.556 0.5306 IC15 9.001 0.966 5.928 IC20 12.219 1.626 5.442 16.758 -0.2176 IC25 16.380 >17 >17 IC40 IC50





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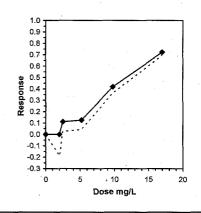
7d biomass vield

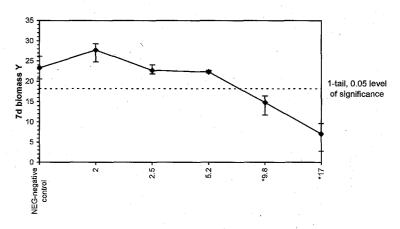
				Lemna gibba-7d	biomass Y		
Start Date: End Date: Sample Date: Comments:	30/07/2008 28/08/2008		Test ID: Lab ID: Protocol:	1664722 WI-Wildlife International OECD221-Lemna sp. grow	Sample ID: Sample Type: th Test Species:	8648-M800H08, Reg MET-metabolite of a LG-Lemna gibba	•
Conc-mg/L	1	2	3				
egative control	23.167	20.567	26.167				
2	24.767	29.067	29.267				
2.5	21.867	24.067	22.167				
5.2	22.667	22.167	22,067				
9.8	16.267	16.467	11.767	. •			
17	9.667	8,867	2.767				

		_		Transform	n: Untran		1-Tailed			onic		
Conc-mg/L	Mean	N-Mean "	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
egative control	23.300	1,0000	23.300	20.567	26.167	12.027	3				25.500	1.0000
2	27.700	1.1888	27.700	24.767	29.267	9.178	3	-2.166	2.500	5.079	25.500	1.0000
2.5	22.700	0.9742	22.700	21.867	24.067	5.256	3	0.295	2.500	5.079	22.700	0.8902
5.2	22.300	0.9571	22.300	22.067	22.667	1.442	3	0.492	2.500	5.079	22.300	0.8745
*9.8	14.833	0.6366	14.833	11.767	16.467	17.917	3	4.167	2.500	5.079	14.833	0.5817
*17	7.100	0.3047	7.100	2.767	9.667	53.155	3	7.974	2.500	5.079	7.100	0.2784

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates nor	mal distribu	ıtion (p >	0.05)		0.9201		0.897		-0.6832	-0.4684
Bartlett's Test indicates equal var		7.22969		15.0863						
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	5.2	9.8	7.13863		5.07923	0.21799	165,092	6.19167	4.2E-06	5, 12
Transments up NEC populius con	dent -									

Linear Interpolation (200 Resamples) Point IC05 95% CL(Exp) 2.054 4.938 **Skew** 5.6853 mg/L 2.228 0.416 9.105 7.285 1.0486 IC10 2.455 1.241 2.108 IC15 5.585 1,221 0.000 -1.3987 IC20 6.371 0.483 4.464 8.344 0.2520 IC25 7.156 0.511 5.362 9.510 0.3078 IC40 9.513 0.779 6.854 13.177 0.1122 IC50 11.740 1.050 7.127 15.763 -0.3639





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7d biomass growth rate

Lemna gibba-7d biomass GR											
Start Date: End Date: Sample Date: Comments:	30/07/2008 28/08/2008		Test ID: Lab ID: Protocol:	1664722 WI-Wildlife International OECD221-Lemna sp. growth	Sample ID: Sample Type: Test Species:	8648-M800H08, Re MET-metabolite of a LG-Lemna gibba	•				
Conc-mg/L	1	2	3								
gative control	0.4061	0.3902	0.4225								
. 2	0.4151	0.4368	0.4378								
2,5	0.3984	0.4112	0.4002								
5.2	0.4032	0.4002	0.3996								
9.8	0.3591	0.3607	0.3172								
17	0.2924	0.2817	0.1536								

···			Transform: Untransformed					1-Tailed			Isotonic	
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
egative control	0.4063	1.0000	0.4063	0.3902	0.4225	3.987	3				0.4181	1.0000
2	0.4299	1.0582	0.4299	0.4151	0.4378	2.980	3	-0.844	2.681	0.0751	0.4181	1.0000
2.5	0.4033	0.9926	0.4033	0.3984	0.4112	1.729	3	0.108	2.681	0.0751	0.4033	0.9645
5.2	0.4010	0.9870	0.4010	0.3996	0.4032	0.481	3	0.189	2.681	0.0751	0.4010	0.9591
9.8	0.3456	0.8508	0.3456	0.3172	0.3607	7.138	3	2.165	2.681	0.0751	0.3456	0.8267
*17	0.2426	0.5971	0.2426	0.1536	0.2924	31.848	3 -	5.846	2.681	0.0751	0.2426	0.5802

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)					0.85088		0.897		-1.4946	5.16801
Bartlett's Test indicates unequal	variances (p	= 1.79E	-03)		19.1648		15.0863			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Bonferroni t Test	9.8	17	12.9074		0.07507	0.18478	0.01427	0.00118	2.4E-04	5, 12

Treatments vs NEG-negative control

Linear Interpolation (200 Resamples)

Point	mg/L	SD	95% CL	Skew	
IC05	5.516	1.117	0.000	7.154	-1.6902
IC10	7.254	0.574	5.493	9.927	0.3781
IC15	8.992	0.813	6.186	12.030	0.0193
IC20	10.581	0.956	6.923	14.422	-0.0635
IC25	12.042	1.232	8.047	17.387	0.1521
IC40	16.422				
IC50	>17				

